CLAIM

What I claim as my invention is:

1. A system comprises any e-mail or web-mail clients, one or more Adapter/Server Engines for processing e-mail attachment requests, one or more Conventional Mail Servers, and one or more Project/Information Management Servers for applying concurrent version control and other file management rules on stored attachments. These components are connected to each other as indicated in <u>Figure</u> <u>2</u>.

2. The system of claim 1 wherein e-mail or web-mail clients can be any standalone e-mail clients such as Outlook etc., and any web based e-mail clients, such as Yahoo mail, Hotmail etc.

3. The system of claim 1 wherein Conventional Mail Servers can be any mail servers that handle e-mail sending, receiving, and storage etc.

4. The system of Claim 1 wherein Adapter/Server Engines are programs that process e-mails, identify rule controls on attachments according to user specification and predefined rules, and establish communications among mail clients and the Project/Information Management Server. The Adapter/Server engine will separate the attachment from the original e-mail, create a unique descriptor and locator and attach them to the original e-mail and pass the mail to conventional mail servers, meanwhile, the separated attachment along with other attachment identification information will be passed to Project/Information management Server(s). There can be more than one Adapter/server Engines depending on whether all e-mail correspondents are within the same network or not. If they are in the same network, only one Adapter/Server Engine is needed. And Adapter/Server Engine may not be needed for some recipients. If so, a browser based communication/access will be established when clicking the attachment link.

5. The system of Claim 1 wherein Project/Information Management Server(s) is server side program that handles all detailed file and document management which includes store, retrieve, compare, update, delete, personalized attachment management, concurrent version control (on or off), etc. The said server has

special storage management and profile management, and can be accessed via Internet browsers with secure authentication process and can be installed inside or outside firewalls.

6. A method of providing a secure and unique way to directly manage attachments among senders and receivers using either their e-mail or web-mail client interfaces or a browser based Project/Information Management Client Interface that requires login authentication, the method comprising following steps:

A sender attaches attachment(s) in an e-mail that will be sent to recipient(s). After attaching the attachment to the e-mail, the sender selects attachment control rules either from a list of features that can be directly linked to individual attachment, or from specifying a set of preemptive rules that apply to any attachments sent or received under certain project folder(s) other than the Inbox;

The said Adapter/Server Engine intercepts the sent e-mail and processes it to judge whether rules should be applied to the e-mail or not. If it finds out that special rules, such as concurrent version control, are present, the said Adapter/Sever engine will generate a unique locator and descriptor for the e-mail attachment, separate the attachment form the original e-mail, and include the locator and descriptor in the original e-mail. The newly modified e-mail will be passed to conventional mail server and delivered to mail recipient(s). The intercepted attachment along with its descriptor, locator and applied rules will be passed to Project/Information Management Server via unique messaging protocol;

The said Project/Information Management Server gets the attachment package, processes applied rules, creates a management environment according to the rules, and applies special document management method such as Concurrent Version Control on the attachment. The said server allows users modify settings on an attachment through authenticated browse based Client Interface. Such an interface will be administrated by an agreed upon owner of the project or the original

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attachment creator. The member list of the project and their accessing right can be from original recipient e-mails and later be added or deleted by the project owner.

The recipients' Adapter/Server Engine gets the e-mail first and basing on the locator information, establishes a universal locator link within the e-mail ready to broker between mail client and the Project/Information Management Server and passes the e-mail to recipient(s). If the recipient network does not have an Adapter/Server Engine installed, the recipient will get the e-mail with an attachment link. Click on the link will launch a browser window that allows direct secure communication to Project/Information Management Server and download the attachment.

When recipient(s) receives the e-mail with attachment description and locator link, he/she can request (download) to receive a version-controlled copy of the original attachment by clicking the locator link of the attachment. The request will be sent to the Project/Information Management Server;

The said Project/Information Management Server gets the request, check whatever rules apply, for example Concurrent version Control, to the requested document and creates a copied version of the master document. The downloaded document will have version control etc. information attached to it;

When recipient(s) gets the documents, finishes modify it and want to sent it back. He/she can either reply to the original e-mail. Since the version control and identification information are hidden in the original e-mail, as along as users make modification directly on the downloaded file(s), there is no need to specify rules unless user wants to apply different management rules on the said attachment, such as taking out the version control on the document. However, only the document creator will be able to do so. Others can add additional rules only when owner of the file allows them to do so;

The said Adapter/Server Engine on the recipient side intercepts the e-mail and checks the embedded rules with the attached documents. It will pass the change requests along with the attachment to the Project/Information Manager Server. Meanwhile a descriptor and locator will be created and included with the original e-mail. The e-mail is handled by mail servers and sent to recipients;

The Project/Information Management Server will update the document according to the requests and keep one updated master file and log changes;

When recipient gets the attachment file by clicking the attachment link, the document will be the latest updated version.

7. The method of claim 6 wherein the step of specifying rules on the attachment from a mail client comprises the step of creating a list of selectable rules that can be directly linked to an attachment for selection or creating a special mail folder other than the Inbox with special environment settings that apply to all mails sent or received in the folder. Such folders and list of selectable rules displayed on the mail client interfaces will be managed through the said Adapter/Server Engine. And users can pre-define rules into a folder environment through the web browser based Client Information Management Interface or create a folder while attaching and applying rules on the attachment(s). Folder information will be automatically updated into each participant's mail client interface as project folders (inside, it has links to every attachment belonging to the project) when connection is established between client e-mail interface and the IMS.

8. The method of claim 6, wherein the step of accessing managed attachments from a mail client interface other than the Client Information Management Interface comprises special project folders that have dynamic links to attachment(s) belong to each specified project. Accessing the project and management information from the mail client interface does not need additional authentication. The information exchanges are brokered by the Adapter/Server Engine, and then connect to the Information Management Server(s). The program can also

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automatically launch a browser management console for each project and attachment per use request. And any new project information created through either the Client Information Management Interface or the mail client (sending an attachment with rules will automatically create a new project if such a step has not been done) will be automatically updated into mail client as folder(s). The information exchanges thereafter will be directly handled by Information Management Server (IMS).

9. The method of claim 6, wherein the step of providing an authentication includes verifying the identity of the requesters. Attachment(s) can be managed under a special group project. The project, including participants' identities and accessing rights, can be created through the Project/Information Management Client Interface before or after a rule controlled attachment being sent.

10. The method of claim 6, wherein in the step of file/document management through Project/Information management Server, all group members or recipients (including sender) will share one master copy of the original document. Rules that are applied to the document(s) can be added and deleted by owner(s) of the document(s) through either the mail client or the web based Client Information Management Interface. Users that have account on the Project/Information Management Server will get an individualized client interface based on his/her own profile. Whenever a new project is created with a user as a member, the project information will automatically added to his/her own client interface for management and reference. If the user does not have a account with the Project/Information Management Server but is a member of a project, when he/she requests information from the Information Management Server, the server will authenticate the user and automatically launch a browser based client interface for accessing the project related information.

11. A method of displaying, synchronizing, and communicating information management between Project/Information Management Server and various mail clients through Adapter/Server Engine, the method comprises the steps:

A user logins to Project/Information Management Server and create a project specifying members, members' e-mail addresses, document control default settings (such as Concurrent Version Control etc.), etc.;

A notification of the newly created project will be sent to each member by e-mail. Upon accepting the e-mail invitation by replying on it, the said Adapter/Server Engine will create a new folder in the client mail interface with the project name as the folder name. Under the folder, user will be able to find links to all information related to the project. Click on those links will automatically bring up a web browser with the project related information. The browser will communicate directly with the Project/Information Management Server.

Under the newly created folder, user can send and receive messages related to the project. The default setting of rules will be applied to all attachments under this folder unless otherwise specified by users. All communication and synchronization between mail clients and the Project/Information Management Server are handled by the Adapter/Server Engine;

If the user does not install the Adapter/Server Engine on his local network, click on the attachment link will directly establish a communication between the mail client and the Project/Information Management Server through a web browser. The attachment will be downloaded from the said Information Management Server. The user can access the project related information through the browser based Client Information Management Interface. For such a user, all modified documents have to be check-in through the browser interface instead of e-mail.

Or

A user can send e-mails with rules applied to the attachment(s) before creating a project in the Project/Information Management Server. The Adapter/Server Engine will intercept the attachment along with recipient addresses, identification,

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